Mercedes-Benz

Training Job Aid

Replacement of ECU's, keys

54-04

M-Class Models, model year 2000 - 2002

Use the following information as a guideline for replacing electronic control units and adding spare keys for all Model Year 2000 - 2002 M-Class models. This Job Aid will not be updated on a regular basis. Therefore, it is not intended as a substitute for the WIS.

AAM Replacement Procedure
Due to the different software and functions of the AAM (in contrast to the AAM on MY 1998 vehicles) the procedure to replace the All Activity Module has changed.
Since the Drive Authorization function has been relocated, the AAM is no longer vehicle coded; therefore, it is not VIN specific.
To replace the AAM, do the following:

1. Read coding into Star Diagnosis (DAS).
2. Replace AAM.
3. Transfer coding into new control unit.
4. Learn all RF keys to the AAM using the "Learn RF" menu in Star Diagnosis.
   - ι FBM must recognize key as valid in order to be able to learn RF.
   - ι If RF learning fails, a frequency mismatch between AAM and keys may be the case. Frequency to be found inside battery cover:
     - 315 MHz requires US/JPN AAM
     - 433 MHz requires ECE AAM
5. Verify coding and perform function test.

EAM Replacement Procedure
The EAM is not a VIN specific ECU. To replace, do the following:

1. Read coding into Star Diagnosis (DAS).
2. Remove EAM from bracket under dashboard.
3. Remove the FBM Control Unit and slide into new EAM.
4. Install EAM.
5. Transfer coding into new EAM.
6. Verify Coding and perform function test.

FBM Replacement Procedure
The FBM houses all necessary codes for the Drive Authorization System and is therefore a VIN specific part. To replace the FBM, you must special order a control unit indicating the vehicle's identification number and/or lock number. Be sure to determine whether any key has been reversible or irreversibly locked and transfer this information into the new FBM.
Replace the FBM as follows:

1. Remove EAM from bracket under dashboard.
2. Remove FBM Control Unit and replace with new factory coded FBM.
   - ι Lock numbers on adhesive labels on both FBMs must match exactly.
3. Install EAM.
   - ι Vehicle will start immediately.
4. Perform a "Transponder and RF function" test on all keys.
   - ι If central locking is not functioning, Relearn/Resynchronize RF feature in AAM.
5. Relock all previously locked keys.

Adding a RF Key Procedure
To activate additional vehicle keys do the following:
1. Insert key into ignition and turn to position 2.

ι Vehicle will start immediately.
2. Learn RF code in the AAM (Star Diagnosis).
   ι If RF learning fails a frequency mismatch between AAM and keys may be the case. Compare frequencies inside battery cover.
3. Follow on-screen directions (within a 10 second time limit).
   - Remove key and then hold down lock button while pushing unlock button 5 times.
   - Release all buttons and then push either the lock or unlock button.

Re-synchronizing the Vehicle Key Procedure

To resynchronize a RF key do the following:

1. Insert RF key into ignition and turn to position 2.
2. Remove the key and then hold down the lock. button while pushing the unlock button 5 times.
3. Release all buttons and then push either the lock or unlock button.
   ι Procedure must be completed within 10 seconds.

ME/CR Replacement Procedure

Since 2000 the M-Class has been gradually switched from the Drive Authorization system FBS2b to FBS3.

ι FBS3 variant: limited to release code generation, no electronic key!

Due to this fact we have two slightly different replacement procedures depending on the level installed.

<u>FBS2b (ME2.0/HFM)</u>

1. Read coding with Star Diagnosis (DAS).
2. Transfer coding into DAS.
3. Replace engine control unit.
   ι Engine does not start, “Start Error” in IC.
4. Perform identification.
   - Enter/confirm VIN number.
   ι “Start Error” in IC vanishes.
   - Start engine.
   ι Automatic ECU locking after 40 engine starts. Counter can be reset with “Perform identification without coding”.
5. Perform locking.
   ι May be skipped for engine function test and performed at a later point.

<u>FBS3 (ME2.8/CDI)</u>

1. Read coding with Star Diagnosis (DAS).
2. Replace engine control unit.
   ι Engine does not start, “Start Error” in IC.
3. Transfer coding into new control unit.
4. Initialize control module.
   - Enter/confirm VIN number.
5. Detach transport protection of control module.
6. Personalize control module.
   ι Control module is assigned to vehicle; “Start Error” in IC vanishes.
   ι Automatic locking after 40 engine starts. Counter can be reset by again personalizing ECU through menu “Drive Authorization”.
7. Activate (lock) control module.
   ι May be skipped for engine function test and performed at a later point.

ESP Replacement Procedure

To replace the ESP control unit do the following:

1. Replace ESP control unit.
2. Perform version coding of fitted Brakes and Steering (ESP adaptations).
   ι RHD are the only vehicles currently fitted with fixed ratio steering.
3. If the yaw rate or lateral accelerator sensor were replaced, perform Drive Test to normalize them (as of 01/00). DAS: ESP →Adaptations → Drive Test. WIS-document AD42.45-P-3000-02A
4. Check for illuminated MIL’s and fault codes.

AAC Replacement Procedure (as of 2002)

To replace the Automatic Air Conditioning (AAC) control unit installed as of 2002, do the following:

1. Read coding into Star Diagnosis (DAS).
2. Replace AAC control unit.
3. Transfer coding into new control unit.
4. Perform a normalization run for the A/C servomotors. DAS: AAC → Activations.
   ι This procedure also needs to be performed every time a servomotor is replaced.
5. Verify Coding and perform function test.

SRS replacement procedure

To replace SRS control unit do the following:

1. Replace SRS control unit.
2. Start “Coding of a new control unit” with Star Diagnosis (DAS).
   ι Verify DAS model and engine selection corresponds to actual vehicle.
   - Confirm model designation coding.

- Perform adaptation according to vehicle equipment.
  - ι Wrong selection leads to fault storage and incomplete control unit coding.
- Proceed with chassis number locking procedure.
- Enter / confirm chassis number.
- Verify that airbag indicator lamp flashes and confirm.
  - ι Permanently activated lamp indicates a fault in the system. Rectify fault and perform coding again.
  - New control unit is initialized and locked to the vehicle.